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10/849,501

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Reuven Bakalash

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EXAMINER

WASSUM, LUKE S

ART UNIT

PAPER NUMBER

2167

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/849,501

Applicant(s)

BAKALASH ET AL.

Examiner

Luke S. Wassum

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 152-171 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 152-171 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 20050725, 20060530.
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *The Invention*

1. The claimed invention is a data aggregation module for performing a two-stage aggregation of data in a multidimensional datastore.

### *Response to Preliminary Amendment*

2. The Applicants' preliminary amendment, filed 19 May 2004, has been received, entered into the record, and considered.
3. As a result of the preliminary amendment, claims 1-151 have been canceled, and new claims 152-171 have been added. Claims 152-171 are now presented for examination.

### *Priority*

4. The Applicants' claim to domestic priority under 35 U.S.C. § 120, as a Continuation of application 10/314,884, filed 9 December 2002, which is a Continuation of application 09/796,098, filed 28 February 2001, which is a Continuation-in-Part of application 09/514,611, filed 28 February 2000, and application 09/634,748, filed 9 August 2000, is acknowledged.

5. As a result, a priority date of no later than 28 February 2001 (the filing date of the parent application) is established, and depending upon the specific subject matter claimed, the priority date could be as early as 28 February 2000.

*Information Disclosure Statement*

6. The Applicants' Information Disclosure Statement, filed 25 July 2005, has been received and entered into the record. The Information Disclosure Statement complies with the provisions of MPEP § 609 with the exception that no copy of the second-to-last listed non-patent literature document (Zhao) was provided, and the copy of the J.L. Harrington document included only odd pages in random order. All of the other references cited therein have been considered by the examiner. See attached form PTO-1449.

7. The Applicants' Information Disclosure Statement, filed 30 May 2006, has been received and entered into the record. The Information Disclosure Statement, however, fails to comply with the provisions of MPEP § 609.

MPEP § 609.04(a)II states that

"Electronic means or medium for filing IDSs are not permitted except for: (A) citations to U.S. patents and U.S. patent application publications in an IDS filed via the Office's Electronic Filing System (EFS) (see MPEP § 609.07); or (B) a compact disc (CD) that has tables, sequence listings, or program listings included in a paper IDS in compliance with 37 CFR § 1.52(e). A CD cannot be used to submit an IDS listing or copies of the documents cited in the IDS."

Since copies of the foreign patent and non-patent literature documents listed on the Applicants' IDS have been submitted on a CD in lieu of paper copies, these documents have not been considered by the examiner.

The bottom patent reference on page 6 of the IDS was not considered, because the patent number 6,363,3553 is invalid, and neither 6,363,355 nor 6,363,553 corresponded to the patentee information listed.

The second patent reference on page 7 of the IDS was not considered, because the patent information (inventor, class, etc.) listed does not correspond to the patent number (6,399,775).

See attached form PTO-1449.

### *Specification*

8. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code on at least page 2, line 7, on page 6, line 13, on

page 8, line 11, on page 11, line 6, page 33, line 27, and page 35 line 21. The Applicants are required to delete the embedded hyperlink and/or other form of browser-executable code. For more details on this requirement, see MPEP § 608.01.

9. The disclosure is objected to because of the following informalities:

On page 14, line 22 and page 16, line 28, 'deceased' should be *decreased*.

On page 11, line 8, there is a typographical error "one ore more...".

On page 12, line 26, there are erroneous characters ").".

On page 33, line 10, there is a typographical error "it is an object of the present invention is to...".

On page 34, line 40, reference is made to Figure 6E, but there is no such drawing Figure in the application.

On page 35, line 7, reference is made to Figure 6F, but there is no such drawing Figure in the application.

Appropriate correction is required.

### *Drawings*

10. The application includes informal (handdrawn) drawings. While these drawings are acceptable for examination purposes, the examiner encourages the Applicant to

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submit formal drawings at the earliest opportunity. Early submission of formal drawings will help expedite post-allowance processing and publication of the issued patent.

## **INFORMATION ON HOW TO EFFECT DRAWING CHANGES**

### **Replacement Drawing Sheets**

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

### **Annotated Drawing Sheets**

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

### **Timing of Corrections**

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

### ***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 156, 157 and 160 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Claim 156 recites the limitation "said interface" in the first line. There is insufficient antecedent basis for this limitation in the claim.



14. Claim 157 recites the limitation "said client machines" in the first line. There is insufficient antecedent basis for this limitation in the claim.

15. Claim 160 recites the limitation "said interface" in the first line. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17. Claims 152, 154-164 and 166-171 are rejected under 35 U.S.C. 102(e) as being anticipated by **Nolting et al.** (U.S. Patent 6,385,301).

18. Regarding claim 152, **Nolting et al.** teaches a data aggregating module as claimed, comprising an aggregation engine and a multidimensional datastore, wherein the multidimensional datastore stores multidimensional data logically organized along N dimensions, and wherein the aggregation engine performs data aggregation operations on said multidimensional data by:

- a) performing a first stage of data aggregation operations along a first dimension of said N dimensions (see disclosure of binning data by hours of day, col. 19, lines 17-45); and
- b) performing a second stage of aggregation operations for a given slice in the first dimension along another dimension in said N dimensions (see disclosure of the summary tables, comprising, for example, spread call durations, attempts, completions, and related data, organized by study, office, date and hour, col. 20, lines 27-41; see also col. 8, lines 15-35).

19. Regarding claim 164, **Nolting et al.** teaches a method of data aggregation as claimed, for use with a multidimensional datastore that stores multidimensional data logically organized along N dimensions, the method comprising the steps of:

- a) performing a first stage of data aggregation operations along a first dimension of said N dimensions (see disclosure of binning data by hours of day, col. 19, lines 17-45);
- b) performing a second stage of aggregation operations for a given slice in the first dimension along another dimension in said N dimensions (see disclosure of the summary tables, comprising, for example, spread call durations, attempts, completions, and related data, organized by study, office, date and hour, col. 20, lines 27-41; see also col. 8, lines 15-35); and
- c) storing resultant data in said multidimensional datastore (see disclosure that the aggregated data is output in summary tables, col. 20, lines 27-41).

20. Regarding claims 154 and 166, **Nolting et al.** additionally teaches a data aggregation module and method further comprising:

- a) a data loading mechanism for loading data from a database (see col. 7, lines 58-63); and
- b) a storage handler for storing the data loaded from the database and the aggregated data generated by the aggregation engine in the multidimensional datastore (see bin calls in data preparation process 70 in Figure 1; see also col. 7, line 57 through col. 8, line 5).

21. Regarding claims 155 and 167, **Nolting et al.** additionally teaches a data aggregation module and method further comprising an interface for receiving queries generated by a requestor, and control logic that, upon determining that the multidimensional datastore does not contain data required to service a given query, controls the aggregation engine to generate aggregated data required to service the given query and controls the aggregation module to return the data to the requestor (see col. 6, lines 3-16; see also col. 17, lines 16-56).

22. Regarding claim 156, **Nolting et al.** additionally teaches a data aggregation module wherein said interface interfaces to an OLAP server comprising OLAP analysis logic and presentation logic, and client machines operably coupled to the OLAP server to provide user-directed OLAP analysis, to thereby realize an OLAP system capable of performing data aggregation operations on the data, and storing and managing such data (see col. 6, lines 3-16; see also col. 17, lines 16-56).

23. Regarding claim 157, **Nolting et al.** additionally teaches a data aggregation module wherein said client machines include a web-browser-based user interface that enables user access to the OLAP server (see col. 6, lines 3-16).

24. Regarding claim 158, **Nolting et al.** additionally teaches a data aggregation module, integral to a DBMS to thereby realize an improved DBMS capable of performing data aggregation operations on the data and storing and managing such data (see col. 5, line 45 through col. 6, line 28; see also col. 17, lines 16-56).

25. Regarding claim 159, **Nolting et al.** additionally teaches a data aggregation module, integral to a DBMS operably coupled to a plurality of client machines over a network, to thereby realize a data warehouse capable of performing data aggregation operations on the data and storing and managing such data (see col. 5, line 45 through col. 6, line 28; see also col. 17, lines 16-56; see also client terminals 9 in Figure 2B).

26. Regarding claims 160 and 168, **Nolting et al.** additionally teaches a data aggregation module and method wherein the query interface implements a standard protocol for accessing data (see col. 19, lines 38-45).

27. Regarding claims 161 and 169, **Nolting et al.** additionally teaches a data aggregation module and method wherein the standard protocol comprises one of OLDB, OLE-DB, ODBC, SQL and JDBC (see col. 19, lines 38-45).

28. Regarding claims 162, 163, 170 and 171, **Nolting et al.** additionally teaches a data aggregation module and method wherein the aggregation engine stores the resultant data of aggregation operations for the given slice as a record in a data file, wherein start address and end address of the record, and the physical address of the data file is stored in a directory (see disclosure that the multi-dimensional database can be stored in a file, and furthermore that the structure of the data within the file makes it possible to “slice and dice the data” however the user wants to look at it, functionality that would not be possible without a directory that stored the address of the file and the start/end address of the records therein, col. 22, lines 52-67).

***Claim Rejections - 35 USC § 103***

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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30. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

31. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

32. Claims 153 and 165 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nolting et al.** (U.S. Patent 6,385,301) as applied to claims 152, 154-164 and 166-171 above, and further in view of **Castelli et al.** (U.S. Patent 6,535,872).

33. Regarding claims 153 and 165, **Nolting et al.** teaches a data aggregation module and method substantially as claimed.

**Nolting et al.** does not explicitly teach a data aggregation module and method wherein the second stage of aggregation operations involves recursive data aggregation operations for slices in said N dimensions.

**Castelli et al.**, however, teaches a data aggregation module and method wherein data cubes are iteratively and recursively aggregated in one dimension (see col. 5, line 55 through col. 6, line 1; see also col. 8, line 11 through col. 9, line 4; see also Figure 12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to recursively aggregate slices of data in a data cube, since this would allow a system to materialize and store only a subset of views of the data cube, and to compute additional views from the materialized views (see col. 1, lines 44-53), thus providing more direct access to the data views of interest.



*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke S. Wassum whose telephone number is 571-272-4119. The examiner can normally be reached on Monday-Friday 8:30-5:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

In addition, INFORMAL or DRAFT communications may be faxed directly to the examiner at 571-273-4119. Such communications must be clearly marked as INFORMAL, DRAFT or UNOFFICIAL.

Customer Service for Tech Center 2100 can be reached during regular business hours at (571) 272-2100, or fax (571) 273-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Luke S. Wassum  
Primary Examiner  
Art Unit 2167

lsw

7 December 2006